

Applicant: Schleth, et al.
Application Serial No.: 10/622,041
Filing Date: July 17, 2003
Docket No.: 442-192
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REMARKS

Applicants have carefully considered the Office Action dated March 25, 2004, and the references cited therein. Applicants provide the following response in a sincere effort to place the application in condition for allowance. Accordingly, reconsideration is respectfully requested.

In this Amendment, Applicants have cancelled Claims 4, 5 and 7 without prejudice. Accordingly, Claims 1-3, 6, and 8-19 are presented for consideration.

In the Office Action, the Examiner has requested that proper headings be added to the specification. Applicants have so amended the specification. In addition, a typographical informality in the specification has been addressed in this Amendment.

Claims 1-5 and 10-16 have been rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 6,173,969 to Stoll ("Stoll"). Claims 1, 2, 4-6, 10, 11, 17, and 18 have been rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 2,513,178 to Jackson ("Jackson"). Claim 19 has been rejected under 35 U.S.C. §103(a) as being unpatentable over Jackson in view of U.S. Patent No. 2,722,043 to Nenzell ("Nenzell").

In addition, Claims 7-9 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Stoll. The Examiner contends that "Stoll does not disclose the claimed

shapes of the free space i.e. that the inner space has a larger cross-section and is deeper and wider than the outer space.” The Examiner indicates that these are considered design choices as the Applicant has not stated that the shape serves a specific function or provides unexpected results. Therefore, according to the Examiner, it would have been obvious for one of ordinary skill in the art at the time the invention was made to form the inner and outer free spaces such that the inner space was larger, deeper and wider than the outer space as a matter of choice and design.

Applicants respectfully traverse the rejection to Claims 7-9. Claim 1 has been amended to further define the sealing ring and include the feature of Claim 7.

Stoll discloses a sealing ring disposable between two opposed faces of components which are to be sealed in relation to each other. The sealing ring has a base body and a sealing body formed of an elastomeric material. The two bodies are molded together. As shown in Figure 3, one surface of the seal includes a bead 24 extending upwardly from the base body 15. On each side of bead 24 there is formed an annular groove-like recess 27 and 27'. These grooves have the same cross-sectional profile as each other. While these recesses accommodate the material upon the axial squeezing of the sealing ring, they do not, nor is there any other teaching to, direct the bead to deform in a particular direction.

Claim 1, as amended, defines an annular groove and within the annular groove an annular inner free space is provided radially within the sealing bead to receive the deformed material and an outer free space is provided radially outside the sealing bead. The inner free space has a larger cross section than the outer free space. The application clearly shows this feature in Figure 5 and a description is set forth in the specification in paragraphs [0010] and [0046].

The sealing ring of the present invention may be used between two components 1 and 2, which may be secured together by rotating one relative to the other. As set forth in paragraph [0006], when the components 1 and 2 are screwed together, the sealing bead tends to be displaced radially outwardly. Such movement could result in the bead being pinched between the two components and damaged. To address this problem, as set forth in Specification at paragraphs [0010] and [0046], the inner free space 58 provided radially within the sealing bead preferably has a larger cross section than the outer free space 59 provided radially outside the sealing bead. By providing the inner free space 58 with a larger cross section than the outer free space 59, the tendency for radial outward displacement is opposed, resulting in the bead being bent toward the inner free space with a larger cross section. This prevents the sealing bead from being “nipped between the end face 56 and the sealing face 8.” Paragraph [0046].

Accordingly, the configuration of the inner and outer free spaces as defined in Claim 1 serves a specific function. Such a configuration or function is not taught nor suggested in the prior art. In Stoll, as shown in Figures 3 and 4, the cross-section of the seal shows the radially inner and outer portions adjacent the bead as having the same cross-sectional profile and size. No feature is taught which leads the bead to bend inwardly upon axial compression. In Jackson, as shown in Figure 5, the pyramidal cross-sectional shape of the seal ring 13 also shows no cross-sectional variation between either side of the center of the bead. In addition, no particular structure exists to guide the radial movement of the bead upon axial compression.

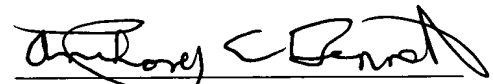
Therefore, Applicants respectfully submit that none of the cited references, either alone or in combination, teach or suggest each of the features set forth in amended Claim 1. Therefore, Applicants respectfully urge that Claim 1, and those claims depending therefrom, patentably distinguish over the references of record.

As a result of the amendments and comments set forth above, Applicants respectfully request favorable consideration of amended Claims 1, 6, 8, and 9, and allowance of the application with Claims 1-3, 6, 8-19.

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If the Examiner believes that an interview would be helpful in moving the application towards allowance, she is respectfully invited to contact Applicants' attorney at the number set forth below.

Respectfully submitted,



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